



WISDOM | CONFIDENCE | INTEGRITY

Module & Lecture Descriptions

2017-2018

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MODULE ONE | INTRODUCTION TO EVIDENCE-BASED LEARNING AND PRACTICE

This module has been designed to partner with the Fundamentals of Nutrition (Module 2) to provide the underpinning knowledge and thought processes that are required to move past simple knowledge acquisition and onto wisdom and knowledge synthesis. The term evidence-based does not mean solely relying on academic research; being an evidence-based practitioner means understanding the research and then being able to contextualise it in your practice by combining it appropriately with experience.

Lecture 1.1 - Welcome Lecture & Introduction to MNU

- The underlying principles of MNU - Wisdom, Confidence & Integrity
- Understanding the key benefits of MNU
- Course structure, setting expectations and getting the most out of your learning experience
- An introduction to the Mac-Nutrition Mentoring Lab

Lecture 1.2 - Understanding a Truly Evidence-Based Approach

- Defining evidence-based practice; science vs application and research vs experience
- Critical evaluation of 'evidence'
- The art of critical thinking
- Bias in nutrition practice and research

Lecture 1.3 - Research Methods - What Do We Really Need to Understand?

- An introduction to scientific research - why is it important?
- Research methods - the hierarchy of evidence
- Spotting good and bad methodology
- Foundational statistics
- Strategies for keeping up-to-date with research

Lecture 1.4 - Biochemistry - Key to Understanding the Practical Elements of Nutrition

- An introduction to biochemistry
- The importance of biochemistry in nutrition
- Energy - Creating energy & ATP; taking a closer look at calories
- Acid-base balance - Homeostasis
- Cell Structure - The basics of a cell

Lecture 1.5 - What is Health & What Role Does Nutrition Play?

- What is complete health?
- The role of genetics in health
- Maternal epigenetics
- Nutrigenomics and Nutrigenetics



MODULE TWO | FUNDAMENTALS OF NUTRITION

Having a sound understanding of physiology and biochemistry is crucial when looking to learn more advanced theory. This module will teach you the fundamentals required to understand more advanced concepts. Similarly, it will highlight key areas of misunderstanding that may undermine future understanding. On other courses, often only the WHAT is taught, however, the information in this module will help you to understand the WHY's of future topics; this level of understanding is so important when trying to disseminate knowledge to others.

Lecture 2.1 - Mastering the Basics of the Digestive & Endocrine Systems

- Overview of the digestive system
- Foods vs nutrients
- The role and function of the digestive organs and digestive enzymes
- Pancreatic hormone release and blood sugar control
- An introduction to appetite hormones
- TSH, Leptin and the sex steroid hormones – implications for fat loss and health

Lecture 2.2 - Understanding Energy Systems & Energy Balance

- Role of ATP
- The Phosphocreatine system and creatine supplementation
- Differences and similarities between the Anaerobic and Aerobic energy systems
- The relevance of energy systems to nutrition
- Energy Balance
 - Core components of energy intake and expenditure
 - BMR, NEAT, NENAT, TEF and EEE
- The crossover between energy systems and energy balance
 - Substrate utilization (RER) and changes in body composition

Lecture 2.3 - Nutritional Myths - Gluten, Organic, Sweeteners & Much More

- The evolution of nutritional myths
- Gluten, gut health and weight loss
- Artificial sweeteners, aspartame insulin and health
- The benefits of eating organic – founded or exaggerated?
- Are high protein diets dangerous?
- Is fasted cardio superior for fat loss

Lecture 2.4 - Is There an Optimal Diet for Human Health?

- What is an optimal diet?
- Ancestral health
- The optimal macronutrient composition for health
- Food choices - gluten, dairy and meat
- Modern dietary patterns & the western diet
- Is there an optimal 'lifestyle' for health?



Lecture 2.5 - The Fundamentals of Protein - Biochemistry & Metabolism

- The chemical structure of protein
- Different types of protein and amino acids
- Protein digestion, absorption and metabolism
- Key functions of protein
- Health and performance benefits of protein
- Myths relating to protein

Lecture 2.6 - The Fundamentals of Carbohydrate - Biochemistry & Metabolism

- The types and chemical structures of carbohydrates
- Carbohydrate digestion, absorption and metabolism
- Carbohydrate requirements
- Benefits of carbohydrate for digestive health, energy, sleep and performance

Lecture 2.7 - The Fundamentals of Fat - Biochemistry & Metabolism

- The chemical structure of fat
- Different types of fat
 - Essential vs non-essential; Saturated, mono, poly and trans-fats
- Cooking with fats – what are the healthiest fats to use?
- Key functions of fat
- Health and performance benefits of fat
- Fat myths

Lecture 2.8 - The Role & Function of Vitamins & Minerals

- An overview of micronutrients and how to measure their status
- The role of vitamins and minerals
- Micronutrient deficiencies
- Antioxidants
- Advising clients and testing micronutrient status
- Supplementation – Knowing what is actually worth the investment

Lecture 2.9 - Meal Timing & Frequency in Health & Performance

- Metabolic effects of meal frequency
- Optimal meal frequency for weight loss
- Carbohydrate timing – Carb Back-loading vs Front-loading
- The evidence surrounding the importance of breakfast for health and weight loss
- Erratic eating patterns and shift workers – implications for health

Lecture 2.10 - The Fundamentals of Hydration for Health & Performance

- Sweat rates and osmolality
- Practical recommendations for maintaining hydration status
- The impact of dehydration on health, weight loss and performance
- Methods of measuring hydration status
- Hydration strategies and the hydration beverage index



MODULE THREE | PRINCIPLES OF NUTRITION SUPPORT AND ADVANCED NUTRITIONAL THEORY

Module 3 builds upon the teachings in modules 1 and 2 and starts to conceptualise the theory into real life with a key focus on fat loss, muscle gain and the pursuit of optimal health. This module will bring to life advanced concepts and techniques going into extreme detail with regards to the physiological, psychological, behavioural and social elements involved in achieving these goals. This module will allow you to become autonomous in tailoring various nutritional techniques and interventions to a wide variety of situations. Module 3 lectures are also taught from a hugely practical standpoint allowing you to apply up-to-date theory almost immediately with yourself, and your clients.

Lecture 3.1 - Hormonal & Biochemical Effects of Dietary Protein

- Measuring nitrogen balance vs using the amino acid oxidation method
- Muscle protein synthesis and mTOR
- Protein requirements for health, recovery from injury and muscle gain
- Protein's effect on appetite and satiety
- Weight loss and muscle retention – the benefits of high protein diets
- Are there preferential proteins for muscle gain and performance?
- Soy vs Whey vs Casein – what does the research say?

Lecture 3.2 - Hormonal & Biochemical Effects of Dietary Carbohydrate

- Advanced carbohydrate metabolism and the insulin hypothesis
- De novo lipogenesis during carbohydrate overfeeding
- Sugar intake
 - Addiction – physiological or behavioural
 - Contribution to obesity and dietary compensation
- Hormonal effects of carbohydrate
 - Insulin, thyroid and leptin
- Periodisation of carbohydrate intake for health and performance
 - When are low carbohydrate diets useful?

Lecture 3.3 - Hormonal & Biochemical Effects of Dietary Fat

- Health and performance benefits of dietary fat
- The optimal Omega 3: Omega 6 ratio
- Saturated fats, insulin sensitivity and blood lipids
- Dairy fat and health
- Dietary fat and appetite regulation
- When might ketogenic diets be useful?
- Omega 3 fish oils for health, weight loss and performance
- Increasing fat oxidation for high performance situations

Lecture 3.4 – Conceptualising Energy Balance & Macronutrient Theory

- Estimating client BMR – predictive equations vs indirect calorimetry
- Using METs and PAL to estimate client NEAT and NENAT
- Considerations for exercise energy expenditure
- Needs analysis for macronutrient breakdown
- Caloric and macronutrient cycling/periodisation
- Translating nutrients to food

Lecture 3.5 - Fat Loss Part 1 - Adherence - The Single Most Important Factor

- Fat loss principles vs methods
- The hierarchy of fat loss and body composition
- Avoiding client failure
- Monitoring adherence & reducing misreporting
- Exploring physiological and psychosocial factors that affect adherence

Lecture 3.6 - Fat Loss Part 2 - Client Specific Approaches to Dieting

- Approaches to dieting – tracking vs non-tracking
- Clean eating vs IIFYM
- Flexible vs rigid dieting
- Creating a calorie deficit – the impact of eating behaviours

Lecture 3.7 - Fat Loss Part 3 - Rates of Weight Loss, Diet Breaks & Metabolic Adaptation

- Fast vs slow rates of weight loss
- Rates of weight loss and adherence
- Maintaining lean body mass when dieting
- Hormonal, metabolic and physical changes associated with energy restriction and dieting – minimising adaptive thermogenesis
- Implementation of diet breaks, refeeds and reverse dieting

Lecture 3.8 - Evidence-Based Body Composition Assessment & Interpretation

- Methods used to determine body composition
 - Skinfolds, DEXA, BIA (Tanita scales), Infrared
- Validity and reliability of techniques – pros and cons

Lecture 3.9 - Advanced Muscle Gain Techniques

- Muscle hypertrophy
- Protein feeding strategies
 - Refractory period and leucine threshold
- Energy Intake and considerations when determining a calorie surplus
- Rates of weight gain - overfeeding/minimising fat gain

Lecture 3.10 - Evidence-Based Supplementation for Health & Performance

- An introduction to the supplement industry
- Evidence-based supplementation to benefit health
 - Fish oils & vitamin D
- Evidence-based supplementation to benefit sports performance
 - Caffeine, creatine, beta alanine, sodium bicarbonate, HMB, L-carnitine

MODULE FOUR | PRACTICAL NUTRITION SUPPORT

Theoretical knowledge of nutrition is only half of the equation when it comes to getting results in the real world with real people. To get amazing results with every client, human behaviour and psychology also need to be carefully considered; as well as giving consideration to the method of nutrition coaching, whether that be online or face to face. This module has been designed to help translate the knowledge gained in modules 1-3 into practice, including every detail you need to know to successfully and confidently work with clients to get consistently amazing results. We will take you through the consultation process, choosing the most appropriate nutrition strategies, motivational interviewing techniques and unique psychological skills that can be used to maximise client adherence.

Lecture 4.1 - Appropriate Use of Food Diaries in Practice

- The different types of food diaries that can be used
- Under & over-reporting
- Nutritional analysis software
- Nutrition data and food labels
- Implementing food diaries into a service - why and when?

Lecture 4.2 - Consultation Process - Beyond Theory & Science

- Pre-consultation form
- Environmental set-up
- Building rapport and initiating behaviour change
- Types of questioning - getting the best information out of your client
- The importance of reflective practice

Lecture 4.3 - Approaches to Client Nutrition Strategies & Programming

- Selecting appropriate nutrition strategies (decision tree logic)
- The benefits and limitations of using meal plans - coaching frameworks
- Tracking methods - from continuous food records to macronutrient tracking
- Exploring non-tracking methods and habit-based approaches
- Spontaneous calorie reduction techniques and low-hanging fruit for weight loss
- Teaching clients to live
- Personality profiling - effective communication and adapting as a practitioner

Lecture 4.4 - Effective Client Monitoring

- Methods for monitoring physical changes - weight vs body composition vs blood testing
- Changes in scale weight - how often should our clients be weighing?
- Verbal monitoring techniques e.g. hunger, sleep, libido, energy levels, dietary habits, hydration
- Monitoring physical activity levels
- Gathering data - impact on adherence and client buy-in
- Social support, qualitative feedback and client progress

Lecture 4.5 - Theoretical & Practical Behaviour Change

- Understanding human behaviour & the relevance of behaviour in nutrition
- Behaviour change theories
 - The theory of planned behaviour
 - Transtheoretical model of behaviour change
 - Self-determination theory (supporting client competence, autonomy and relatedness)
 - Identity-based behaviour change
- Goal theory – setting outcome and process goals, and approach-orientated and avoidance-orientated goals with your clients
- Implementation-intention strategies to improve goal attainment
- Motivational Interviewing – theory, principles and implementation
- Techniques to encourage change talk
- Cognitive Behavioural Therapy within nutritional settings
- Supporting the formation of habits with efficacious messages and methods
- How to improve your emotional intelligence
- Population-based/public health messages vs individualized support

Lecture 4.6 - Delivering Corporate Nutrition Programmes & Other Group Education Settings

- Workplace wellness – a growing market
- Why are companies investing in workplace wellness programmes?
 - What are the benefits?
- Services to offer and what to charge
- Making your workplace wellness programme stand out and gaining social proof

Lecture 4.7 - Online Coaching - Delivering Nutritional Support & Counselling Online

- Similarities and differences between online and face-to-face nutrition support
- Effect monitoring with online clients
- 1-2-1 nutrition services vs online group nutrition services
- Delivering hybrid and blended models of online coaching
- The business of online coaching and the importance of online marketing



MODULE FIVE | SPECIAL CONSIDERATIONS FOR CLINICAL POPULATIONS

As the world's population becomes an increasingly unhealthy one, the impact that nutrition can have on some of the most prevalent health-related diseases is evident. Module 5 will teach the pathology, symptoms and nutritional considerations of common clinical conditions that practitioners will come across on a daily basis. In addition to the theory, this module has been designed to provide information and practical tools on evidence-based nutrition protocols and advanced approaches used in supporting clinical populations with their nutrition, all within an appropriate scope of practice. Special reference will be made to client situations when referring out is the only option a practitioner with integrity should take.

Lecture 5.1 - An Evidence-Based Approach to IBS & Gut Health

- What is IBS?
- Acting within an appropriate scope of practice
- Potential causes of IBS
- Evidence-based management and alternative treatments
- Developing a symptom-dependent approach

Lecture 5.2 - Key Considerations Before, During & Post Pregnancy

- Pregnancy, insulin resistance and gestational diabetes
- Pregnancy and appropriate weight gain
- Nutritional considerations for breastfeeding mothers
- Hormonal implications during pregnancy
- Supplementation during pregnancy

Lecture 5.3 - Working With the Clinically Obese Population

- Understanding the pathology
- The confounding variables surrounding this condition
- Psychological considerations
- Making changes to achieve long term adherence
- An introduction to bariatrics

Lecture 5.4 - Nutrition Considerations for the Elderly - Maximising Quality of Life

- The ageing process
- Nutritional considerations for sarcopenia
- Nutritional considerations for osteoporosis & low BMD
- Age-induced weight loss & maximising immunity
- Cognitive decline & related diseases (e.g. Alzheimer's)
- Considering the difficulties for institutionalised clients

Lecture 5.5 - Understanding the Signs, Symptoms & Implications for Diabetes

- What is Diabetes Mellitus?
- Types of diabetes
- Prevalence of diabetes
- Management of type 2 diabetes
 - Nutritional manipulations and macronutrient composition
 - Weight loss
 - Exercise

Lecture 5.6 - Understanding the Signs, Symptoms & Implications for PCOS

- What is PCOS?
- The prevalence of PCOS
- What are the symptoms of PCOS - Diagnosis
- Can diet help alleviate PCOS?
- The link between insulin resistance and PCOS
 - Nutritional considerations for improving insulin sensitivity in clients with PCOS
- PCOS, weight loss and adaptive thermogenesis - a unique insight

Lecture 5.7 - Cardiovascular Disease - Is There Really a Great Cholesterol Con?

- Prevalence of CVD
- Lipoproteins - 'Good' and 'Bad' Cholesterol
- Risk factors for cardiovascular disease and markers of health
- Nutritional manipulations for improving blood lipid profiles and CVD risk factors
- Statins and cholesterol reduction
- Practical recommendations for reducing the risk of CVD

Lecture 5.8 - Eating Disorders - What is Our Role?

- Defining eating disorders
 - Bulimia Nervosa, Anorexia Nervosa, Anorexia Athletica Body Dysmorphic Disorder, Muscle Dysmorphia, Orthorexia, Pica
- Prevalence of eating disorders
- Eating disorders vs disordered eating
- Binge-eating
- Symptoms of an eating disorder
- Helping clients with eating disorders



MODULE SIX | PERFORMANCE NUTRITION PROGRAMMING

Successfully working with athletes relies on knowing the most up-to-date sports nutrition research out there. This final module aims to not only break down advanced concepts into easy-to-understand theory, but also teaches you how to implement cutting-edge, sport-specific nutrition programmes to a wide variety of disciplines. The difference in physiological demands between strength, power and endurance sports, and therefore the different fuelling and recovery strategies, dietary periodisation, competition protocols, and nutritional approaches to maximise training adaptations required, makes this module a fascinating and highly applied ending to the Mac-Nutrition Universal Certification.

Lecture 6.1 - Considerations for Prepping Bodybuilders

- Identifying a starting point in a bodybuilding diet
- Multi-approach dieting
- Nutrient timing and frequency
- Supplementation
- Peaking strategies for bodybuilding
- Psychosocial aspects of bodybuilding

Lecture 6.2 - Performance Nutrition for Endurance Athletes

- Introduction to triathlon
- Strategies to maximise training adaptations
- Fuelling and hydration strategies to optimise race nutrition
- Event-specific nutrition
- Special Considerations - Competing at altitude/in extreme environments

Lecture 6.3 - Performance Nutrition for Team Sports

- Nutritional hierarchy of importance for team sports
- Pre-match preparation
- Optimising recovery and maximising training adaptations
- Advanced training strategies
- Creating supplementation protocols

Lecture 6.4 - Evidence-based Strategies for Making Weight

- Introduction to weight making sports
- Making weight - fat loss
- Maximising power-weight ratio
 - Nutritional considerations for strength, power and speed
- Acute weight making strategies
- Post-weigh in considerations